

welcome in this country. These happenings have the incidental effect, that his book is written in our language.

An introductory chapter describes the university system under which German science became great: administration, so far as it existed, elected by the faculty; departments of education restricted to part of one year's instruction of those Doctors of Philosophy who were to staff the secondary schools. In the personal reminiscences which make up the bulk of the work, the accounts of Bütschli, O. Hertwig, R. Hertwig, Boveri, Schaudinn, and Prowazek are particularly full, and are marked by evident affection.

The writer of this review was particularly interested by reference to an unhappy piece of personality involved in the discovery of mitosis. At about the middle of the stretch of time which has elapsed since this discovery, I took careful notes upon the lectures of an eminent cytologist, a pupil of Strasburger; including at one point the following passage:

"Schneider deserves the credit for discovering mitosis, but . . . and Strasburger have always received it. Strasburger's story is as follows: he discovered mitosis, but foolishly showed it to his friend . . . The latter got a leave of absence from the university, went to Italy, and published his book, *Zellbildung und Zelltheilung*, in '75, a few months before Strasburger published his. . . would doubtless tell a different story."

This account is erroneous upon its face. I have assured myself, by correspondence with former fellow students and with very little personal satisfaction, that the confusion was in the lectures, and not in the note-taking. Goldschmidt's reference to the same incident is as follows:

"Bütschli told me—and in view of his character there can be no doubt of the truth of his words—that at first Strasburger could not interpret his slides of dividing plant cells. At that time he learned that Bütschli was doing similar things and visited him (Bonn and Frankfurt are not far apart). Bütschli demonstrated his material and discussed his interpretations, and this first opened Strasburger's eyes. But, while Bütschli kept adding still more facts, Strasburger published his first report."

Thus Strasburger's pupil and Bütschli's agree that Strasburger let his observations be known to a colleague, undoubtedly Bütschli. We do not have to believe that Strasburger was unable to understand what he had seen. Surely he was within his rights in bringing his observations quickly to publication. It remains a reasonable possibility that Bütschli was justified in resenting a failure to acknowledge cooperation which had been genuinely important.—H. F. COPELAND, Sacramento Junior College.

Edward Palmer, Plant Explorer of the American West. By ROGERS McVAUGH. 430 pp., 12 plates, 2 maps. 1956. University of Oklahoma Press, Norman. Cloth, \$6.00.

Parry, Pringle, and Palmer compose a triumvirate in the botanical exploration of the American West. Parry's part in the discovery of new species in the days when Asa Gray and colleagues were busily describing the floras of the West remains to be told; Pringle's story has been detailed (at least for his important Mexican years) by Miss Helen Davis in 1936. Now Professor McVaugh of the University of Michigan has provided a biography of Edward Palmer (1831–1911). Palmer is considered less important than either Parry or Pringle, if inclusion in the *Dictionary of American Biography* is a significant test. Like Parry, Palmer was born in England, though less identified with British botany than Parry, who took pains to forward his collections to Kew, and to keep in touch with Hooker. Palmer was either self-effacing or the victim of poor luck in winning recognition in this country. Other botanical explorers were more than once the foci of important reports on the floras of the western states, but with few exceptions Palmer's discoveries were only incidentally noticed in the course of the reporting on the collections of others. Only for Palmer's pioneering explorations on Guadalupe Island off the Mexican coast was there special recognition. It seems especially difficult to determine the personality of Edward Palmer, whereas of Parry and Pringle we know good stories and revealing remarks. In a long series

of letters from Parry to Harry Norton Patterson of Oquawka, Illinois, often stuffed with gossip news of botanists, there is scant mention of Dr. Palmer (Kibbe, Alice L., *Afield with plant lovers and collectors*. pp. 172-205. 1953. Carthage, Ill.). Misfortune befell Palmer now and again in his field collecting, as when Parry decries in his letter of April 11, 1879, that there "came another batch from Palmer, made on his route home from San Luis [Potosi] to Tampico. They are generally in very bad condition, hardly fit for herbarium specimens, and I do not think best to include them in the sets." Indifferent health, too, plagued Palmer. Parry wrote under date of September 7, 1888, "Dr. Palmer is out here, but is not able to collect much." Palmer seemed to miss the joy of collecting, for instance, that Pringle felt when, west of the city of Chihuahua, he wrote: "in the afternoon I went down to the river for a bath and brought home with me at dark 1211, *Dalea filiformis* Gray, 1436 *Bouteloua bromoides* Lag., and 1251 *Prionosciadium madrese* Wats., n. gen., and 1400 *Scirpus pringlei* Wats. n. sp." A new genus and a new species are a happy ornament to any bath, a kind of shower of glory.

In his life Palmer was never one of the restless, striving sort. All his urgency and strenuousness he reserved for his collecting. As John Burroughs said of Whitman, "he seems always to have been a sort of visitor in life, noting, observing, absorbing, keeping aloof from all ties that would hold him."

One of the few recorded anecdotes of Palmer comes, not from McVaugh, but from that raconteur Edmund Jaeger (*Desert wild flowers*, ed. 2, p. 207. 1941. Stanford.). Returning from a trip that Palmer made with Parry and Lemmon to San Gorgonio Peak, the highest mountain in southern California, in May, 1876, he fell from his horse and severely injured his spine. He was left on an improvised litter while the party returned for assistance down the mountain. Meanwhile the San Bernardino newspaper reported that Dr. Palmer had been left "on the mountain without grass or water with a man to look after him." For some time afterwards he was greeted as "the man who had been left on Grayback [the local name of the mountain] without grass or water." Or, by others, "Hello! Old grass and water! How's your back?" This meeting with Parry and Lemmon was, in fact, a momentous week, for though Palmer had become acquainted with Parry in 1870, if not before, they had not been in the field together. Later they were to botanize together in Mexico. Lemmon had come to the winter resort of Crafton to join Dr. Parry for exploration of the San Bernardino Mountains. Parry evidently found Lemmon an agreeable companion for he wrote Patterson on January 2, 1879, that Lemmon was "an excellent botanist and good fellow otherwise." Dr. Palmer never elicited such a verdict from Parry.

Palmer was an indefatigable collector (though McVaugh doubts that he ever really 'enjoyed' collecting). His specimens were inferior to Pringle's and often subsequent in time to Parry's for Colorado, southern California, and the Mexican borderlands. But for Mexico Standley says that "his collections are surpassed in extent, probably, by those of no other collector." By Safford's count 1,162 species of flowering plants were first made known to science from his specimens—a notable record indeed! Sereno Watson resorted to anagrams in the course of describing Palmer's new genera, witness *Malperia*. Palmer told Tidestrom that on one occasion when he visited Harvard Asa Gray exclaimed, "Watson, here comes Palmer, get out the register of new species."

Palmer's bird collections have been extensively noticed by Joseph Grinnell (A distributional summation of the ornithology of Lower California. Univ. Calif. Publ. Zool. 32: 1-300. 1928) for Lower California, including the Guadalupe Island species, some now extinct. A short note published in *Entomological News* at his death refers to his insect and other zoological collections preserved at Harvard and Washington. When his zoological collections are included in the total, the number of types based on Palmer's material must surely exceed two thousand species, an accomplishment that can never be repeated for this continent.

Palmer's ethnobotanical contribution was of the first importance, though not

stressed by McVaugh. Walter Hough wrote at Palmer's death that the value of his collections rested "in the early period of their acquisition and the care with which the data and the method of procuring them were recorded." He "made the first exploration of an ancient pueblo ruin, in 1873, a mound at St. George, Utah, preserving every fragment of evidence that came under his trowel and carrying out the exploration with a skill and perfection of method that have not been surpassed in that field." This assiduous collector brought together "some of the most unique specimens ever obtained from the Apache," and, altogether, his ethnological material is accounted among the most valuable in the United States National Museum. In writing of such subjects as sand-fool (*Ammobroma sonora*), Palmer was careful to cite the Indian name, *biatatk*, and its procurement and use.

Any sketch of Palmer must be a pedestrian account. McVaugh's biography itself is brief, amounting to 122 pages of the book. The narrative is, in fact, an extended annotated itinerary through life rather than a portrait. It is perhaps impossible to uncover the portrait of the man Palmer. His friends, sponsors, competitors, cronies, Indians, and a very few ladies are identified in on-the-spot footnotes. Dinah Riches, his English bride who accompanied him on the transatlantic run of the *Amazon*, out of London docks April 16, 1856, drops from the Palmer story with the fall of the anchor in New York harbor. McVaugh justly remarks that this event ranks "among the most intriguing incidents of his life."

Following the biographical portion of the book is a 230-page gazetteer of collecting localities, giving the precise location in terms of seventy-five maps checked for their inclusion. This 'geographical index' will prove immensely useful for placing not only Palmer's localities but for others of his period. Some of us will shelve this book beside the atlases, directories, and nomenclators for ready reference. The photographic illustrations animate the book and there are two unusual maps. JOSEPH EWAN, Department of Botany, Tulane University, New Orleans.

NOTES AND NEWS

VARIABILITY IN *TRILLIUM OVATUM* PURSH. This *Trillium*, so readily recognized, is nevertheless subject to frequent striking variations. Normally the three leaves are approximately equally spaced, separated by angles of 120°. However, it is fairly common to find plants in which two of the leaves are directly opposed, i.e., making an angle of 180°, while the third leaf is inserted on one side, perpendicular to the common axis of the other two. This suggests that some ancestor may have had four leaves, and indeed, one plant (unfortunately sterile) was seen which *had* four leaves, of approximately the same size and equally spaced.

Occasionally plants are seen which are 2-merous, sometimes imperfectly so (one plant had one normal leaf and one leaf which was divided about one-fourth of its length from the apex), but sometimes they are completely and perfectly 2-merous. One plant which was perfectly 2-merous throughout was transplanted for further observation, and the next year the root sent up two stalks, both of which were normal and perfectly 3-merous! In another year this root again produced a 2-merous plant, although not so perfect as the first one had been.

At one station plants were observed to produce, year after year, flowers which had crumpled and imperfect petals in addition to and inside the three normal ones.

These tendencies toward variability in *Trillium ovatum* suggest an inherent genetic instability.—VESTA F. HESSE, Boulder Creek, California.